08-23-04

AF/2875/D

PATENT

UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. 01-1008-A)

In re Application of:	)	
	)	
Malone et al.	)	
	)	**Examiner: Choi, Jacob Y.**
Serial No.: 10/054,173	)	
	)	**Group Art Unit: 2875**
Filed: January 18, 2002	)	
	)	**Confirmation No.: 4542**
For: Method for Vacuum Deposition of Circuitry onto a Thermoplastic Material and a Vehicular Lamp Housing Incorporating the Same	)	

TRANSMITTAL LETTER

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

In regard to the above-identified application:

1. We are transmitting herewith the attached:
   a. Brief on Appeal with Appendices A, B and C (all in triplicate)
   b. Check in the amount of $330.00
   c. Return receipt postcard

2. Please charge any additional fees or credit overpayment to Deposit Account No. 13-2490. A duplicate copy of this sheet is enclosed.

3. CERTIFICATE UNDER 37 CFR 1.10 (EXPRESS MAIL): The undersigned hereby certifies that this Transmittal Letter and the documents hereinabove listed are being deposited with the United States Postal Service as "Express Mail Post Office to Addressee" being Express Mail No. EV334701442US in an envelope addressed to: Mail Stop APPEAL BRIEF - PATENTS, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this **20th** day of **August, 2004**.

Respectfully submitted,
McDonnell Boehnen Hulbert & Berghoff LLP

Date: August 20, 2004 By:

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Malone et al.	
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BRIEF ON APPEAL

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The applicants hereby file an original and three copies of this appeal brief.

I. REAL PARTY IN INTEREST

The real party in interest is Meridian Automotive Systems, Inc.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals and interferences.

III. STATUS OF CLAIMS

A. At final rejection:

Claims 7, 11, 24 and 27 were cancelled.

Claims 1-6, 8-10, 12-23, 25, 26 and 28-34 were pending, in which: all pending are rejected, which rejections are appealed from.

A clean set of the claims as pending upon final rejection is attached in Appendix A.

B. Applicants submitted an after-final amendment which has been rejected by the Examiner requesting the following:

Claims 31-34 were cancelled.

Claims 1-6, 8-10, 12-23, 25, 26 and 28-30 and new claim 35 would be pending, in which all pending claims would be rejected, which rejections are appealed from;

A clean set of the claims set forth in the after-final amendment are attached in Appendix B and a redlined set of the claims as sought to be amended by the after-final amendment is attached in Appendix C.

IV. STATUS OF AMENDMENTS

An after-final amendment was filed on March 16, 2004. On April 6, 2004, the Examiner issued an Advisory Action refusing to enter the proposed amendment as they were not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal. As of the filing of this Appeal Brief, the after-final amendment had not yet been entered. However, because of the minor nature of the amendments and because they would reduce the number of issues on appeal, the applicants expect the after-final amendment will be entered and, therefore, have limited the arguments in this Appeal Brief to the issues remaining after entry of the amendments.

V. SUMMARY OF THE INVENTION

The invention relates *inter alia,* to a method for deposition of circuitry onto a lamp housing. In one of its aspects, the invention relates to vacuum deposition of circuitry for automotive applications. In another of its aspects, the invention relates to a vehicular lamp housing incorporating a circuit placed thereon by vacuum deposition. In another of its aspects, the invention relates to a vehicular lamp housing with vacuum deposition of circuitry powering light-emitting diodes. In another of its aspects, the invention relates to a vehicular lamp housing with a vacuum deposition of circuitry powering removable incandescent lamps. *See* p. 3, lines 16-24; p. 10, lines 9-14.

The thickness of the conductive layer, as claimed in some of the claims at issue, is 1 to 4 microns. P. 6, lines 3-6.

VI. ISSUES

The issues presented to the Board are those remaining after entry of the after-final amendment (which will obviate all rejections).

A. Whether, with respect to apparatus claims 16-23, 25, 26 and 28-30 (and proposed claim 35) the teachings of the primary references are "sufficient to show an obviousness to one having ordinary skill in the art at the time the invention was made to specify a workable range of the conductive layer" on a conductive lamp housing substrate where the claims specifically call for a conductive layer 1 to 4 microns thick that (1) is not disclosed or suggested by any reference of record; (2) has not been shown even prima facie to be achievable using prior art methods of record and (3) has been demonstrated by the Nykerk declaration to not be achievable using the prior art methods of record.

B. Whether the 103(a) rejection by the Examiner of claims 1-6, 8-10, 12-15 to a method of manufacturing a conductive lamp housing by direct metallization of a countoured surface, was appropriate, where (1) no such methods disclosed or suggested in the prior art and (2) the Examiner has not attempted to make a prima facie showing that such direct metallization of contoured lamp housings was disclosed or suggested by the references of record.

C. Whether the Examiner's rejection of the Applicants' Amendment After Final was appropriate, including new claim 35.

VII. GROUPING OF THE CLAIMS

A. With regard to the rejection under 35 U.S.C. § 103(a) of the apparatus claims, claims 16-23, 25, 26 and 28-30 (and proposed claim 35) stand and fall together.

B. With regard to the rejection under 35 U.S.C. § 103(a) of the method claims, claims 1-6, 8-10, 12-15 stand and fall together.

C. With regard to the Examiner's refusal to enter the Applicants' Amendment After Final, claim 35 stands or falls alone.

VIII. ARGUMENT

A. Apparatus claims 16-23, 25, 26 and 28-30 (and proposed claim 35) are not invalid under 35 U.S.C. § 103 (a) , as being unpatentable over any of the cited references

The Office Action rejected the aforementioned claims under 35 U.S.C. § 103(a) as unpatentable over Suzuki (USPN 6,290,380), and over Hancox (USPN 4,246,632) or Forish (5,529,525) or Harris

(USPN 4,047,018). *See* Office Action mailed January 16, 2004, pp. 2-6. The Examiner has agreed, however, that none of these references teach a conductive layer of 1 to 4 microns. Instead, the Examiner argues, without support, that it would have been obvious to one having ordinary skill in the art at the time the invention was made to specify a workable range of the conductive layer of the substrate. *Id.*

Claim 16, with its requirement that the conductive layer be 1 to 4 microns thick, is not anticipated by nor obvious in light of the cited references. Furthermore, claim 16 requires that the conductive layer is deposited directly onto the substrate, as opposed to on some intermediate or independent layer that is not in direct contact with the substrate. Neither the thickness limitation nor the deposited directly limitation are found in the prior art. Nor are they suggested by the prior art, or shown to be a mere "optimum or workable range" as argued by the Examiner.

Applicant acknowledges that the method of forming a device is not germane to the issue of patentability of the device itself. However, where, as here, the prior art does not teach a method of manufacture which enables the manufacture of a device meeting the structural limitations, then the device itself cannot be deemed to be anticipated or rendered obvious by the references. None of the references teach a conductive layer that is structurally deposited directly on the substrate. Moreover, none of the references describe a range of conductive layer thicknesses that includes the claimed range. To the contrary, a person of ordinary skill in the art would understand the references to ***exclude*** the claimed conductive layer thickness of 1 to 4 microns deposited directly on the lamp housing . The Declaration of Todd Nykerk, submitted with the Amendment and Response After Final, explains in detail how a person of ordinary skill in the art would not understand any of the cited references to teach or suggest a conductive layer 1 to 4 microns thick deposited directly onto a lamp housing. *See* Nykerk Decl., ¶¶ 1-14.

Neither Suzuki, Hancox, Forish, nor Harris enable any method of manufacture of a conductive layer that is 1 to 4 microns thick that is deposited directly onto the substrate of the lamp assembly. Nor would such a conductive layer be obvious, or a mere "optimum value" of a "result effective variable."

Suzuki teaches that the conductive layer must be part of a ""flat arranging material 28," a flexible print circuit or a flexible flat circuit, col. 4, lines 41-42, and that this "belt-like" flat arranging material is then fixed within a concave groove 27 of the substrate, col. 4 lines 9-11. Hancox, similarly, teaches that the electrically conductive elements be separate components that have apertures through which pass heat deformable spigots for attachment to the lamp assembly substrate, col. 3, lines 59-69, which would preclude a conductive layer 1 to 4 microns thick. Harris teaches that the conductor is first applied to a flexible printed circuit board 43. col. 2, lines 24-36. Forish teaches that the conductors are first stamped, Col. 6, lines 5-9, which would not permit a conductive layer 1 to 4 microns thick. None of these references teaches, nor renders obvious, a conductive layer that is 1 to 4 microns thick that is deposited directly onto the substrate of the lamp assembly.

The heavier construction called for by these prior art references was considered appropriate given the handling and operation conditions of many lamp assemblies. They are often handled by consumers, or in repair shops under relatively rugged conditions. Moreover, many such lamp assemblies are used in vehicles, where they are constantly subject to significant wear and tear. A conductive layer of 1 to 4 microns deposited directly on the lamp substrate, even if feasible given the prior art manufacturing processes, would not have been considered optimum in light of these conditions.

Moreover, a conductive layer that is pre-formed on a circuit board or in a flexible flat circuit involves very different manufacturing considerations and can be made under tighter tolerances than a conductive layer deposited directly on a lamp assembly substrate. Lamp assembly substrates are larger components, often contoured, which make positioning and even distribution more difficult, particularly where only 1 to 4 microns of conductive material is being deposited.

Given the foregoing, therefore, a conductive layer of 1 to 4 microns deposited directly on the lamp substrate is not simply selecting an optimum value of a result effective variable involving only routine skill. These references clearly do not teach, or render obvious, the claimed apparatus. As such, claims 16-23, 25, 26 and 28-30 (and proposed claim 35) should be found patentable over these references.

In view of the foregoing, the Applicants respectfully request reversal of this rejection.

B. Method claims 1-6, 8-10, 12-15 are not invalid under 35 U.S.C. § 103 (a), as being unpatentable over any of the cited references

The Office Action rejected the aforementioned method claims under 35 U.S.C. § 103(a) as unpatentable over these same references as the apparatus claims discussed above, and further in view of Longueville (USPN 5,785,534) and Croutzer (USPN 5,977,489). The Examiner has also argued that method claims 1-6, 8-10, 12-15 are invalid over these same references The rationale set forth in the Office Action is as follows:

> It has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. Also the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, these limitations have not been given patentable weight.

Office Action mailed January 16, 2004, p 6 (citations omitted). Applicants have a hard time understanding this argument, as the subject claims are unquestionably method claims. How can the method of forming the device not be germane to the issue of patentability of *the method claims for forming the device*? Moreover, this argument seems to be inconsistent with the argument made by the Examiner in connection with the apparatus claims: How can the "deposited directly" requirement be argued as strictly a "method of forming" limitation in the apparatus claims, and yet "depositing particles by direct metallization to form a layer of conductive material" argued to be "the mere claiming of a use of a particular structure" in the method claims? In fact, these limitations are structural and functional.

What is clear is that none of the cited references teach or suggest method of manufacturing a conductive lamp housing, comprising depositing particles by direct metallization to form a layer of conductive material on a contoured surface of the lamp housing to form an electrical spray circuit as required by the subject claims. The Examiner has not attempted to make out a prima facie case that a person of ordinary skill in the art would consider direct metallization of a lamp housing to be analogous to either (1) spray coating electrical contact spots with plastic to form "bumps" or "bulbs" that serve as mechanical guides for connectors as taught by Longueville, USPN 5,785,534 (Col. 7, line 41) or (2) spray coating an electrically conductive elastomeric material onto a noble metal or noble metal composite substrate as taught by Croutzer, USPN 5,977,489 (Col. 8, lines 11-41; Col. 1, line 66 -67; Col. 3, lines 29-31).

In view of the foregoing, the applicants respectfully request reversal of this rejection.

C. The Amendment and Response After Final should have been allowed

In the Office Action dates April 6, 2004, the Examiner refused to allow the Amendment And Response After Final, stating that the proposed claim amendments did not place the application in better form for appeal and that the Nykerk Declaration should be accorded little or no weight. The Examiner failed to give this amendment and response its due.

First, the Nykerk declaration is not mere opinion, but clearly outlines the import of the cited references to a person of ordinary skill in the art, and points out why the Examiner's arguments fail to establish a prima facie case of unpatentability.

Moreover, the Examiner's suggestion that the proposed claim amendments did not place the application in better form for appeal by materially reducing or simplifying the issues for appeal is inconsistent with the Examiner's subsequent statement that "In response to applicant's argument that the references fail to show certain features of the applicant's inventions, it is noted that the features upon which applicant relies (i.e. the conductive layer is 1 to 4 microns thick) are not recited in the rejected independent claims." The proposed amendment, *inter alia*, did just that, by incorporating this 1 to 4 micron thick conductive layer limitation into independent claim 16.

Conclusion

Therefore, contrary to the Examiner's position, the claims are not rendered obvious by the cited references. Accordingly, this rejection should be reversed, the Amendment After Final Allowed, and the claims as amended issued.

Respectfully submitted,

Date: August 20, 2004

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We claim:

1. A method of manufacturing a conductive lamp housing, comprising depositing particles by direct metallization to form a layer of conductive material on a contoured surface of a substrate that forms part of the lamp housing, in order to form part of one or more electrical spray circuits when said conductive material is connected to at least one or more power sources and one or more light sources.

2. The method of manufacturing a lamp housing of claim 1, wherein the direct metallization deposition of the layer of conductive material is deposited by vacuum deposition in a vacuum chamber.

3. The method of manufacturing a lamp housing of claim 2, wherein the layer of conductive material is deposited by sputter vacuum deposition.

4. The method of manufacturing a lamp housing of claim 2, wherein the layer of conductive material is deposited by cathodic arc vacuum deposition.

5. The method of manufacturing a lamp housing of claim 2, wherein the layer of conductive material is deposited by E-beam vacuum deposition.

6. The method of manufacturing a lamp housing of claims 1 or 11, wherein the layer of conductive material is metal.

7. (canceled)

8. The method of manufacturing a lamp housing of claim 1, further comprising a step of forming distinct electrical pathways in the layer of conductive material during deposition.

9. The method of manufacturing a lamp housing of claim 8, wherein the distinct electrical pathways are formed by masking the lamp housing prior to deposition of the layer of conductive material on the lamp housing.

10. The method of manufacturing a lamp housing of claim 1, further comprising a step of depositing a reflective coating on the substrate.

11. (canceled)

12. The method of manufacturing a lamp housing of claim 1, further comprising a step of applying a spray seal on said substrate.

13. The method of manufacturing a lamp housing of claim 1, further comprising a step of applying a protective coating to said conductive material.

14. The method of manufacturing a lamp housing of claim 1, wherein the step of depositing a conductive layer further comprises depositing one or more terminals for contacting said light sources.

15. The method of manufacturing a lamp housing of claim 1, wherein the step of depositing a conductive further layer comprises depositing at least one connection for electrically connecting said conductive layer to said power sources.

16. A lamp housing comprising a substrate, further comprising a conductive layer for one or more electrical circuits deposited directly on said substrate, wherein said conductive layer is 1 to 4 microns thick.

17. The lamp housing of claim 16, wherein the conductive layer is formed by vacuum deposition of the electrical circuits on said substrate.

18. The lamp housing of claim 17, wherein the conductive layer is directly embedded in said substrate.

19. The lamp housing of claim 16, further comprising one or more openings in said lamp housing for one or more light sources.

20. The lamp housing of claim 17, further comprising one or more terminals attached to the conductive layer at said openings.

21. The lamp housing of claim 17, wherein said light sources comprise one or more light emitting diodes.

22. The lamp housing of claim 17, wherein said light sources comprise one or more incandescent lamps.

23. The lamp housing of claim 16, further comprising a reflective coating.

24. (canceled)

25. The lamp housing of claim 16, further comprising a spray seal.

26. The lamp housing of claim 16, further comprising a protective coating on said conductive layer.

27. (canceled)

28. The lamp housing of claim 16, further comprising a single connection for electrically connecting said circuits to one or more power sources.

29. The lamp housing of claim 16, wherein said housing comprises one or more molded channels to facilitate receipt of said conductive layer.

30. The lamp housing of claim 16, wherein said housing comprises one or more smooth corners to facilitate receipt of said conductive layer.

31. The lamp housing of claim 1 wherein the lamp housing is comprised of a thermoplastic material.

32. The lamp housing of claim 1 wherein the contoured surface is comprised of a plurality of compartments, each compartment being generally concave.

33. The method of manufacturing a lamp housing of claim 10, wherein the conductive material and reflective coating are formed on the substrate within the same vacuum chamber.

34. The method of manufacturing a lamp housing of claim 10 wherein the conductive material and reflective coating are formed on the substrate simultaneously in the same vacuum chamber.